Attorney Docket No. 82998

Application Serial No: 10/695,497
In reply to Office Action of 2 August 2004

AMENDMENTS TO THE CLAIMS

1. (cancelled)

2. (currently amended) A system ~~as in claim 1~~ for controlling fluid flow into an inlet of a vehicle, said system comprising:

at least one vortex generator mountable to the vehicle, said vortex generator capable of generating streamwise vortices in the fluid flow and capable of adjusting a strength of the streamwise vortices and a lateral position of the streamwise vortices relative to the inlet wherein said vortex generator ~~comprises means mountable to the vehicle for~~ generates the streamwise vortices by ejecting fluid into the fluid flow at an outlet flush with a hull of the vehicle;

detection means mountable to the vehicle for detecting the lateral position of the streamwise vortices and for producing an output indicative thereof;

measuring means mountable to the vehicle for measuring pressure of the fluid flow that has entered the inlet and for producing an output indicative thereof; and

a controller responsive to said detection means, said measuring means and said vortex generator for controlling the operation of said vortex generator based on the outputs from said detection means and said measuring means, wherein the strength and the lateral position of the streamwise vortices are adjusted thereby controlling the fluid flow into the inlet.

3. (Original) A system as in claim 2 wherein said detection means comprises sensors mountable to the vehicle proximate to the inlet of the vehicle.

4. (Original) A system as in claim 3 wherein the ejected fluid is air.

5. (cancelled)

6. (cancelled)

7. (cancelled)

8. (currently amended) A system ~~as in claim 7 wherein said vortex generator comprises means mountable to the vehicle~~ for controlling water flow into an inlet of a vehicle wherein the

inlet forms part of an underwater launch system that includes a tube coupled to the inlet for housing a payload that is to be launched therefrom using the water flow passing through the inlet, said system comprising:

at least one vortex generator positioned within a hull of the vehicle and forward of the inlet with respect to forward movement of the vehicle, said vortex generator generating streamwise vortices by ejecting a flow of fluid into the water under pressure at an outlet flush with the hull as the vehicle moves therethrough, said vortex generator being controllable to adjust strength of the streamwise vortices and a lateral position of the streamwise vortices relative to the inlet;

detection means mountable to the vehicle for detecting the lateral position of the streamwise vortices and for producing an output indicative thereof;

pressure sensors mountable to the vehicle fore and aft of the payload for measuring pressure of the water thereat that has entered the inlet and flowed into the launch system, said pressure sensors producing outputs

indicative of the pressure fore and aft of the payload; and

a controller responsive to said detection means, said pressure sensors and said vortex generator for controlling said vortex generator based on the outputs from said detection means and said pressure sensors, wherein the strength and lateral position of the streamwise vortices are controlled to balance the pressure fore and aft of the payload.

9. (Original) A system as in claim 8 wherein said detection means comprises sensors mountable to the vehicle proximate to the inlet of the vehicle.

10. (Original) A system as in claim 7 wherein said vortex generator comprises:

at least one wing; and

means, mountable to the vehicle and each said wing, for positioning each said wing in the water to generate the streamwise vortices and for positioning each said wing flush with the vehicle to eliminate the streamwise vortices.

11. (Original) A system as in claim 10 wherein said detection means comprises sensors mountable to the vehicle at the inlet of the vehicle.

12. (cancelled)